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20 November 1964

[redacted]
Post Office Box 9474
Rosslyn Station
Arlington, Virginia 22209

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Subject: [redacted] Project SC-1305
Progress, Report, October-November 1964

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Gentlemen,

Enclosed are four (4) copies of [redacted] Progress

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Report on Project SC-1305 for the period October-November 1964.

Very truly yours,

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[redacted]
Vice President - Marketing

RJL/de

Encl: (4) P.R. - 3 pp.

Cert. #743 840

PROGRESS REPORT
For
AUTOMATIC STEREO CORRELATOR
SC 1305

"Construction of Breadboard System of an Automatic Stereo Correlator and Evaluation of the Performance Capabilities of such a System."

Period Covered: October - November 1964

Date: 19 November 1964

Job No.: SC 1305

Document No.: OD-106

This is the third monthly progress report.

TASK OBJECTIVE

To manufacture a breadboard and to conduct sufficient tests to determine the performance capabilities inherent in a system of automatic stereo correlation as described in the 552 MSC Proposal.

CURRENT STATUS OF WORK

Electronic

- 1) All preliminary electrical design has been completed.
- 2) The scan head electronic assembly is completely wired except for the exciter lamps for the synchronization circuits. This assembly consists of:

- a) The Photomultipliers
- b) The Photomultiplier's Voltage Dividers
- c) The Photomultiplier's Preamplifiers
- d) The Five Photodiodes
- e) The Five Photodiode's Preamplifiers
- f) The Five Exciter Lamps for the Photodiodes

- 3) The Triac Power Amplifier Assembly is completed and tested. This illumination control assembly consists of the following:

- a) A Triac Power Amplifier
- b) Two Transformers to power the two projector type lamps
- c) An Electronic Speed Control for the Scan Motor
- d) A Transformer to power the Scan Head Exciter Lamps

- e) Fixed Phase Voltage Damping Resistors to permit the "X" and "Y" axes servomotors to come to a "soft" stall when the limit switches are tripped

4) The Scan Preamplifier Chassis has been completed and connected to the servo amplifier and to the Triac power amplifier. The scan preamplifier chassis is composed of the following:

- a) A Main Channel Amplifier
- b) A 4 Channel Multiplex System
- c) Eight Integrators to maintain the signals during a full revolution of the scan disc
- d) Four Difference Amplifiers to serve as the error detectors for the X, Y, ϕ and M channels
- e) Two Illumination Control Preamplifiers and their associated integrators
- f) A Difference Amplifier to serve as the error detector for the illumination control

5) The Servo Amplifiers have been assembled into a rack and interconnections have been made for system use.

Opto-Mechanical

It is anticipated that the opto-mechanical breadboard will be completed by 27 November, and that the scan head will be completed by 20 November 1964.

PROBLEM AREAS ENCOUNTERED

It was determined that, with the scan motor directly mounted to the scan head, the vibration was excessive. The motor mount has been redesigned to allow for a belt drive with the scan motor mounted on a separate structure.

DOCUMENTATION OF VERBAL COMMITMENTS AND/OR AGREEMENTS

None have been made.

PROJECTED WORK FOR THE NEXT REPORTING PERIOD

1. Completion of debugging of electronics.
2. Adjustment of scan optics and completion of entire mechanical assembly.
3. Preliminary evaluation and tests.
4. Start of rework based on preliminary evaluation and tests.